

REMARKS

Reconsideration and allowance of the above-identified Application in view of the above amendments and the following remarks are respectfully requested.

Claims 1-12 and 15-26 are pending. Claims 1, 2, 5, 6, 8, 9, 15-17, 20-23 and 26 have been amended herein merely to correct minor clerical error and to clarify the claim language further. The amendments to claims 1, 2, 5, 6, 8, 9, 15-17, 20-23 and 26 are not intended to narrow the scope of these claims in any way.

Entry of this amendment is proper under 37 C.F.R. § 1.116 as the amendments:

(a) place the application in condition for allowance for the reasons discussed herein; (b) do not raise any new issues that would require further consideration and/or search as the amendments merely amplify issues discussed throughout the prosecution; (c) do not present any additional claims without canceling a corresponding number of claims; and (d) place the application in better form for appeal, should an appeal be necessary. The amendments to the claims merely correct minor clerical errors and do not raise any new issues that would require further considerations and/or search. Entry of the Amendment is respectfully requested.

Claim Rejections – 35 USC § 102

Claim 26 was rejected under 35 U.S.C. § 102(b) as being anticipated by Alfano et al. (U.S. Patent No. 5,847,394). Applicant respectfully traverses this rejection for at least the following reasons.

The Examiner contends that Alfano et al. teaches an apparatus for examining a surface having all the elements recited in claim 26. Applicant respectfully disagrees.

Alfano et al. discloses an apparatus for imaging objects based on polarization and depolarization of light. The apparatus shown in Figure 7 in Alfano et al. includes a rotatably-mounted polarizer 15 which is used to ensure that the light from source 13 is polarized and includes a rotatably-mounted analyzer 21 which is used to select the parallel and perpendicular components of backscattered light from tissue sample T. The backscattered light is detected by CCD camera 19 which is connected to computer 23 for analyzing the information detected by the CCD camera 19 (see col. 13, lines 25-48 in Alfano et al.). The computer 23 in Alfano et al. merely subtracts the parallel and perpendicular polarization components of the backscattered light to enhance the image of the illuminated tissue sample. The computer of Alfano et al. does not calculate a brightness or color information of the image of tissue sample.

Consequently, Alfano et al. does not disclose, teach or suggest, *inter-alia*, “a processing unit configured and arranged to calculate a brightness and color information for a plurality of points of the surface from pixels of at least two images of the surface,” as recited in claim 26.

Therefore, Applicant respectfully submits that claim 26 is patentable over Alfano et al. and respectfully requests that the rejection of claims 26 under § 102(b) over Alfano et al. be withdrawn.

Claims 1-3, 5-10, 15-18 and 20-23 were rejected under 35 U.S.C. § 102(e) as being anticipated by Wolff et al. (U.S. Patent No. 6,046,811). Applicant respectfully traverses this rejection for at least the following reasons.

The Examiner contends that Wolff et al. discloses a CCD camera/processing unit downstream of the polarization analyzer capable of processing specularly and diffusely reflected light. Applicant respectfully disagrees.

Wolff et al. merely discloses an apparatus and method for determining electrical conductivity of a surface of an object. Wolff et al. uses the information of phase retardance due to the reflection of a polarized light off of the surface of the object to determine or identify the electrical conductivity of the surface of the object. This is completely different from an apparatus for examining a surface including, among other things, a processing unit configured to calculate a brightness and an intensity of a plurality of points of the surface from pixels of at least two images of the surface, as recited in claims 1, 15 and 16. Moreover, Wolff et al. does not disclose, teach or suggest “the polarization analyser element constructed and arranged to alternately transmit a crossed polarization state and a parallel polarization state,” as recited in claim 1.

Furthermore, the method of Wolff et al. is completely different from a process for the non-contact examination of a keratinous surface which includes, among other things, calculating a brightness and an intensity of a plurality of points of the surface from pixels of at least two images of the surface, as recited in claim 9.

Therefore, Applicant respectfully submits that claims 1, 9, 15 and 16, and claims 2, 3, 5-8, 10, 17, 18 and 20-23 which depend directly or indirectly from one of claims 1, 9, 15 or 16 are patentable over Wolff et al. Thus, Applicant respectfully requests that the rejection of claims 1-3, 5-10, 15-18 and 20-23 under § 102(e) over Wolff et al. be withdrawn.

Claim Rejections – 35 USC § 103

Claims 4 and 19 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wolff et al. Applicant respectfully traverses this rejection for at least the following reasons.

Claim 4 depends indirectly from claim 1 and claim 19 depends directly from either claim 15 or claim 16. Therefore, for at least the reasons provided above with respect to claims 1, 15 and 16, Applicant respectfully submits that claims 4 and 19 are patentable over Wolff et al. Thus, Applicant respectfully requests that the rejection of claims 4 and 19 under § 103(a) over Wolff et al. be withdrawn.

Claims 11 and 12 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Wolff et al. in view of Doan (U.S. Patent No. 5,247,344). Applicant respectfully traverses this rejection for at least the following reasons.

Claims 11 and 12 depend from claim 9. Therefore, for at least the reasons provided above with respect to claim 9, Applicant respectfully submits that claims 11 and 12 are patentable over Wolff et al. Furthermore, as conceded in the Office Action, Wolff et al. does not disclose, teach or suggest that the digital images are polychromatic digital images, as recited in claim 12.

Doan does not overcome the deficiencies noted above in Wolff et al. Doan is merely concerned about inspecting a solder joint by providing a low angle diffuse illumination and observing the image of the solder joint with television camera. Doan does not disclose, teach or suggest a process for the non-contact examination of a keratinous surface which includes, among other things, calculating a brightness and an intensity of a plurality of points of the surface from pixels of at least two images of the surface. Consequently, neither Wolff et al. nor Doan, alone or in combination, disclose, teach or suggest the subject matter recited in claims 11 and 12.

Therefore, Applicant respectfully submits that claims 11 and 12 are patentable over the combination of Wolff et al. and Doan and respectfully requests that the rejection of claims 11 and 12 under § 103(a) over the combination of Wolff et al. and Doan be withdrawn.

Claims 9, 10, 24 and 25 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shiratori et al. (U.S. Patent No. 5,974,160) in view of Nanna (U.S. Patent No. 5,552,890). Applicant respectfully traverses this rejection for at least the following reasons.

Shiratori et al. merely discloses a method and apparatus for measuring gloss irregularity and printing unevenness by acquiring an image of an inspection object with an

image pickup device (a TV camera) and detecting in the acquired image bright or dark regions forming closed regions as portions representative of the gloss irregularity and printing unevenness of the inspection object (see col. 2, lines 40-55 in Shiratori et al.).

As conceded in the Office Action, Shiratori et al. does not disclose, teach or suggest analyzing crossed and parallel polarizations of a light beam reflected by a surface. Furthermore, Shiratori et al. does not disclose, teach or suggest taking digital images of the crossed and parallel polarizations of the reflected beam much less calculating a brightness and an intensity of a plurality of points of the surface from pixels of at least two images of the surface, as claimed in claim 9. In fact, Shiratori et al. merely performs a Fourier Transform (a calculation) on only a single 2D-image obtained by the camera to obtain the power distribution of respective intensity bands (see col. 8, lines 46-59 in Shiratori et al.). Shiratori et al. merely multiplies particular band frequencies of the power distribution by emphasizing coefficients and performs an inverse Fourier transform to obtain an emphasized image in which brightness and darkness of the 2D-image are emphasized. Thus, Shiratori et al. does not calculate the brightness of the image.

Nanna et al. fails to overcome the deficiencies noted above in Shiratori et al. Nanna et al. merely discloses a gloss measurement system based on specular light reflected by an object. Nanna et al. uses two polarizing filters 20 and 22 oriented 90 degrees with respect to each other (see Figure 3 in Nanna et al.) to separate the diffuse or color reflection component from the specular or gloss reflection component. Two images are taken sequentially using each of the two polarizing filters. The images are then subtracted from each other on a pixel by pixel basis to obtain an image which contains only specular or gloss reflections (see abstract in Nanna et al.). Hence, Nanna et al. merely subtracts the two acquired images to eliminate the diffuse or color reflection component and to obtain an image which contains only specular or gloss reflections. Consequently, Nanna et al. does not calculate a brightness and an intensity of a plurality of points of the surface from pixels of at least two images of the surface.

Furthermore, Shiratori et al. uses a Fourier Transform calculation on a single 2D-image to gain information on gloss irregularity in the image and to emphasize darkness and brightness of the image while Nanna et al. subtracts two images which are taken with two filters to obtain an image which contains only gloss reflections. The method of Shiratori is completely different from the method of Nanna et al. and are not compatible with each other. Thus, one of ordinary skill in the art would not have been motivated to combine Shiratori et

al. and Nanna et al. Therefore, neither Shiratori et al. nor Nanna et al., alone or in combination, disclose, teach or suggest the subject matter recited in claim 9.

Therefore, Applicant respectfully submits that claim 9, and claims 10, 24 and 25 which depend from claim 9, are patentable. Thus, Applicant respectfully requests that the rejection of claims 9, 10, 24 and 25 under § 103(a) over the combination of Shiratori et al. and Nanna et al. be withdrawn.

CONCLUSION

In view of the foregoing, the claims are now in form for allowance, and such action is hereby solicited. If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, he is kindly requested to contact the undersigned at the telephone number listed below.

All objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,  
PILLSBURY WINTHROP LLP



ROBERT C. PEREZ  
Reg. No. 39328  
Tel. No. (703) 905-2159  
Fax No. (703) 905-2500

RCP/KG  
P.O. Box 10500  
McLean, VA 22102  
(703) 905-2000